

L 11377-65  
ACCESSION NR: AP4043908

ENCLOSURE: 02

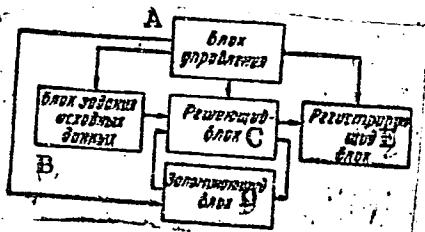


Figure 2.

A — control unit; B — unit for input of initial data; C — decision unit; D — memory unit; E — recording unit

Card 5/5

BULAKH, Ye.G.

Bipolar transparent graph paper for interpreting gravity anomalies.  
prikl. geofiz. no.40:127-130 '64  
(MIR 1831)

BULAKH, Yevgeniy Georgiyevich; YUN'KOV, A. A., prof., doktor geol.-min. nauk, otdv. red.; SHCHUL'MAN, I. F., red.

[Integral relations for the interpretation of gravity anomalies] Integral'nye sootnoshenija dlja interpretsii gravitatsionnykh anomalij. Kiev, Naukova dumka, 1965. 114 p.  
(MIRA 18:2)

BULAKH, Ye.G. [Bulakh, YE.H.]; YEVSIKOVA, L.G. [Evsikova, L.H.]

Curves of the relative form of gravity anomaly for vertically  
bounded dome structures, Dop. AN URSR no. 5:587-590 '65.

1. Institut gornoy mekhaniki i tekhnicheskoy iibernetiki i  
Institut geofiziki AN UkrSSR. (MIRA 18:5)

BULAKH, Ye.G.; YEVSIKOVA, L.G.

Theoretical curves of the gravity anomalies over dome  
structures. Geofiz. sbor. no.8:59-62 '64. (MIRA 18:6)

I. Institut geofiziki AN UkrSSR.

ACC NR: AM5015044 BOOK EXPLOITATION

UR/

Bulakh, Yevgeniy Georgiyevich

Integral relationships for the interpretation of gravitational anomalies (Integral'-nyye sootnosheniya dlya interpretatsii gravitatsionnykh anomalii) Kiev, Izd-vo "Naukova Dumka", 1965. 114 p. illus., bibliogr., diagrs. (in portfolio). 1000 copies printed. (At head of title: Akademiya nauk Ukrainskoy SSR. Institut geo-fiziki) Managing editor: Professor A. A. Ynn'kov, Doctor of Geologic-Mineralogic Sciences; Editor: I. F. Shtul'man; Technical editor: D. V. Virich; Proofreader: Ts. I. Shchupak

TOPIC TAGS: earth gravity,.. gravitation anomaly, gravitation field, magnetic anomaly, integral relation

PURPOSE AND COVERAGE: This book was intended for geophysicists. The integral relationships between disturbing masses and the anomalous gravitational field are presented. This anomalous function is integrated in finite limits, and the results are applied for interpretation of gravitational anomalies by direct methods and by the method of similarity. Errors in selection of the normal field have no effect on the results of computing the depth of occurrence of disturbing masses according to some of the formulas. Two series of graphs are compiled for interpretation of anomalies by the method of similarity, and they may be used to provide an evaluation of a selected geologic profile according to an anomaly that is complicated by the regional effect.

Cord 1/2

ALL NR: AM5015044

TABLE OF CONTENTS (ABRIDGED):

- Introduction -- 3  
Ch. 1. Some integral relationships for gravitational and magnetic anomalies -- 7  
Ch. 2. The application of integral relationships for interpretation of gravitational anomalies by direct methods -- 27  
Ch. 3. The position of the center of a region, computed according to integral criteria, for certain bodies of regular geometric shape -- 56  
Ch. 4. The application of integral relationships for interpretation of gravitational anomalies by the method of similarity -- 64  
Conclusions -- 112  
Literature -- 114

SUB CODE: 08

/SUBM DATE: 14Jan65

/ORIG REF: 020

/OTM REF: 001

Card 2/2

BULAKH, Ye.S.; REMREV, V.F.

New devices used for the control of flame extinction. Priborostroenie  
no.4:31-32 Ap '57. (MLRA 10:5)  
(Flame photometry)

REMNEV, V.F.; BULAKH, Ye.S.

Electronic apparatus for controlling water level in tanks of industrial products. Khim. i tekhnopl. i masel 4 no.3:23-24 Mr '59. (MIRA 12:4)

1. Spetsial'noye konstruktorskoye byuro po avtomatizatsii neftepererabotki i neftekhimicheskikh proizvodstv.  
(Electronic instruments) (Liquid level indicators)  
(Petroleum products)

FRCLCVISKIY, P.A.; Prinimali uchastiye: ANDERS, V.R.; REMNEV, V.F.;  
BULAKH, Ye.S.; KHURSHUDYANTS, I.K.; YATSENKO, P.G.; TARASOV, A.I.;  
IOGANSON, A.V.; LULOVA, N.I.; KURDRYAVTSEVA, N.A.

Kh.L-3 laboratory chromatograph. Khim. i tekhn.topl.i masel  
6 no.7:44-49 Jl '61. (MIRA 14:6)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-  
pererabotke i neftekhimii.  
(Gas chromatography)

REMNEV, V.F.; ANDERS, V.R.; PODKOVKIN, M.F.; BULAKH, Ye.S.

Electropneumatic temperature indicator. Khim. i tekhn. topl.  
i masel 4 no.3:33-35 Mr '59. (MIRA 12:4)

1. Spetsial'noye konstruktorskoye byuro po avtomatizatsii  
neftepererabotki i neftekhimicheskikh proizvodstv.  
(Temperature regulators) (Electronic transformers)

BULAKHOV, Denis Grigor'yevich, Geroy Sotsialisticheskogo Truda;  
TELESFCHENKO, V., red.; YERMOLENKO, V., tekhn. red.

[We are building a city] Stroim gorod. Minsk, Gos.izd-vo  
BSSR, 27 p. (MIRA 15:10)

1. Brigadir brigady konechnoy produktsii Minskogo stroitel'-  
nogo trësta №.4 (for Bulakhov).  
(Minsk--Construction industry)

KANAVETS, P.I.; GESS, B.A.; SPORIUS, A.E.; CHERNYSHEV, A.M.;  
MELENT'YEV, P.N.; CHERNYKH, V.I.; KHROMYAK, R.P.;  
KHAYLOV, B.S.; BORISOV, Yu.I.; TSYLEV, L.M.; SOKOLOV, V.S.;  
Prinimali uchastiyer: MARKIN, A.A.; GORLOV, M.Ya.;  
VORONOV, Yu.G.; BULAKHOV, K.A.; KREMYANSKIY, V.L.; ARSHINOV,  
G.P.; MAZUN, A.R.; PISARNITSKIY, I.M.; BOKUCHAVA, O.A.;  
KIRILLOV, M.V.; TSELUYKO, P.I.; POLYAKOV, G.O.; REZKOV, A.S.;  
ZHUCHKOV, M.I.; ROMASHKIN, A.S.; ZUBKOV, A.S.; KOZLOV, N.N.

Pilot plant for the nodulizing of finely ground charge mixtures by the method of chemical catalysis. Trudy IGI 22:  
93-109 '63.  
(MIRA 16:11)

BULAKHOV, V.I.

Ecologic conditions for the development of vimba in Dnieper Reservoir.  
Vop. shkol. 5:19-22 '62. (MIRA 16:6)

1. Nauchno-issledovatel'skiy institut hidrobiologii Dnepropetrovskogo  
universiteta, Dnepropetrovsk.  
(Dnieper Reservoir--Vimba)

BULAKHOV, V.L.

Ecology of the black kite in the Dnieper Valley.  
Ornithologija no.6s111-116 '63. (MIRA 17:6)

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307420007-8

ZHURAVEL', P.A.; BULAKHOV, V.L.; MIASOYEDOVA, O.M.

Vasilii Vasil'evich Stakhovskii, 1883- ; on his 80th birthday.  
Ornitologija no.7:505-506 '65.

(MIRA 18:10)

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307420007-8"

BULAKHOV, Yu.I., inzh.

Use of rods for placing 6 kv. power line supports into rock. Ener-  
getik 8 no.11:26-27 N '60. (MIRA 13:12)  
(Electric lines--Poles)

S/535/61/000/143/002/006  
D033/D112

*26.2190*  
AUTHOR: Bulakhov, Yu. S.

TITLE: Transition of hydraulic boosters to manual control

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 143, 1961.  
Issledovaniye nekotorykh elementov gidropnevmaticheskogo  
oborudovaniya samoletov, pp 44-70.

TEXT: The author discusses the processes of transition to manual rudder and/or aileron control upon failure of the hydraulic system of an aircraft. Formulae are developed for determining the time required for this transition and the cross section area of the throttling slot of hydraulic booster systems. The operation of the single elements in hydraulic boosters ensuring smooth transition to manual control is analyzed. To achieve smooth transition, the pilot must exert a certain force on the control wheel or pedals to counteract the resulting load. This force must be enough to keep the control valve in either of its extreme positions. The formulae

*✓B*

Card 1/2

Transition of hydraulic ...

S/535/61/000/143/002/006  
D053/D112

developed by the author were tested and proved to be satisfactory for design purposes. The author also examines the effect of the following factors on the period of time required for transition to manual control; the discharge coefficient of the liquid through the throttle slot; the cross section area of the slot; rigidity of the outer load; the pressure to be overcome in opening the flow-maintenance valve ("klapan kol'tsevaniya"). It was established that the cross section area of the throttle slot affects the transition time more than any other factor. There are 9 figures, 2 tables and 1 Soviet-bloc reference. ✓B

Card 2/2

BULAKHOVA, L.G.

Capillaroscopic observations in certain mental diseases. *Fiziol.zhur.*  
(Ukr.) 1 no.5:97-103 S-0 '55. (MIRA 9:11)

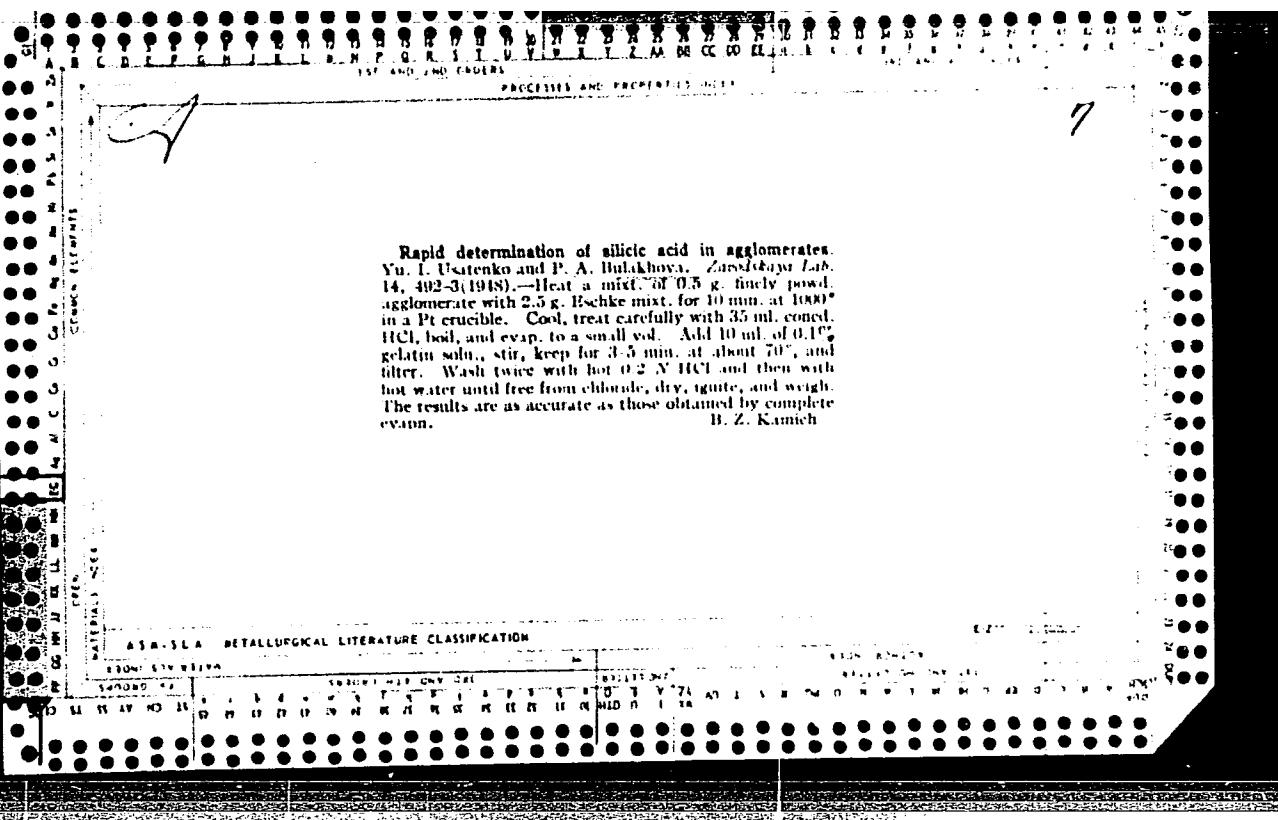
1. Kiivs'kyi institut udoskonalenna likariv, kafedra psikiatrii.  
(CAPILLARIES, in various diseases,  
capillaroscopy)  
(MENTAL DISORDERS, physiology,  
capillaroscopy)

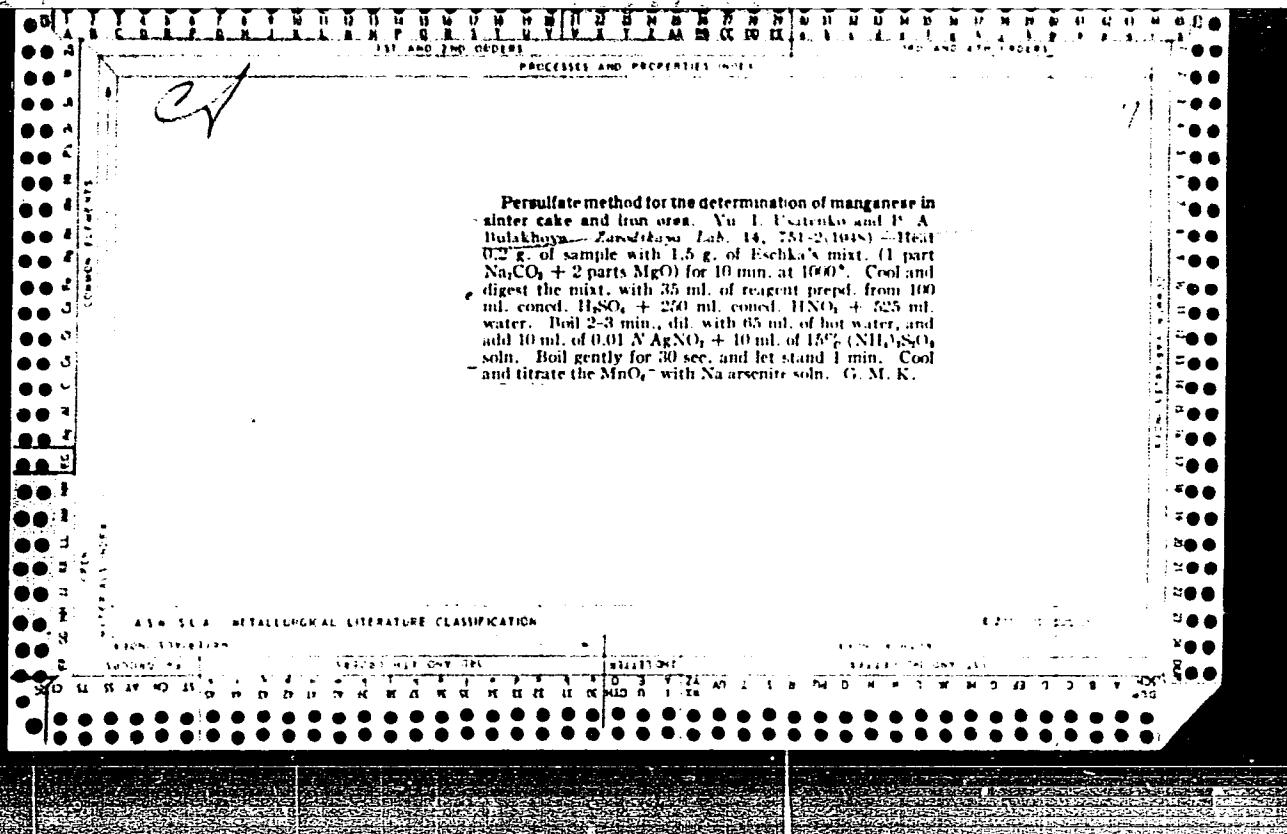
BULAKHOVA, L. A. Cand Med Sci -- (diss) "Peculiarities of skin capillaries in patients affected with schizophrenia and manic-depressive psychosis." Kiev, 1959. 16 pp (Acad Sci UkrSSR. Department of Biol Sci), 150 copies (KL, 52-59, 125)

BULAKHOVA, L.A.

So-called archicapillaries in psychotics. Vrach.delo no.2:  
143-147 F '60. (MIRA 13:6)

1. Kafedra psichiatrii (zav. - prof. I.A. Polishchuk) Kiyevskogo  
instituta usovershenstvovaniya vrachey.  
(CAPILLARIES) (MENTALLY ILL)





CHEMICAL AND MINERALOGICAL ANALYSIS

7

*CH*

Determination of iron and insoluble residue in ores without the use of mercuric chloride and phosphoric acid  
 Yu. I. Usatenko and P.-A. Butakova. Znachok. Lab. 14, 1420-1(1948). - Det. of metal. Fe soln. and Fe in ore by soln. in HCl, filtration of insol. portion, and detn. of Fe by dichromate method is not satisfactory when excess  $\text{SnCl}_4$  is oxidized in dil. solns., as the blue color change is not distinct, and the endpoint with phenylanthraquinone indicator in HCl soln. is also poor. By following the modified procedure satisfactory results were obtained with deviations within 0.47% in comparison with  $\text{HgCl}_2\text{-H}_3\text{PO}_4$  method. Reagents: siliconomolybdc acid 0.17 g., Na silicate in 5 ml.  $\text{H}_2\text{O}$  mixed with 0.14 g.  $\text{NH}_4$  molybdate in 15 ml.  $\text{H}_2\text{O}$ , dild. to 25 ml. and treated with 1.2 ml. 1:1  $\text{H}_2\text{SO}_4$ ; phenylanthraquinone acid 0.1 g. added to 0.1 g. dry (or 0.25 g. cryst.)  $\text{NaCO}_3$  in 30 ml. warm water and dild. to 100 ml. Procedure: 0.5 g. sample moistened with little water and dissolved in 15 ml. concd. HCl below 70° with addn. of 1.2 ml.  $\text{SnCl}_4$  soln. after 5 min., after disappearance of large particles the mixt. is boiled and Fe is reduced by dropwise addn. of  $\text{SnCl}_4$  until color less and 1-2 drop excess; a small amt. of  $\text{NaHCO}_3$  is added, 2 drops of siliconomolybdc acid soln. and the mixt. is titrated by  $\text{K}_2\text{Cr}_2\text{O}_7$  to green color. After cooling, 10 ml. 1:4  $\text{H}_2\text{SO}_4$  is added and 1 ml. phenylanthraquinone acid soln. and titration continued with  $\text{K}_2\text{Cr}_2\text{O}_7$  to red-brown color. Only the vol. used in 2nd titration is used in calcn. The contents after heating to the b.p. is filtered and the insol. residue detd. as usual. G. M. E.

## ASIA-SEA METALLURGICAL LITERATURE CLASSIFICATION

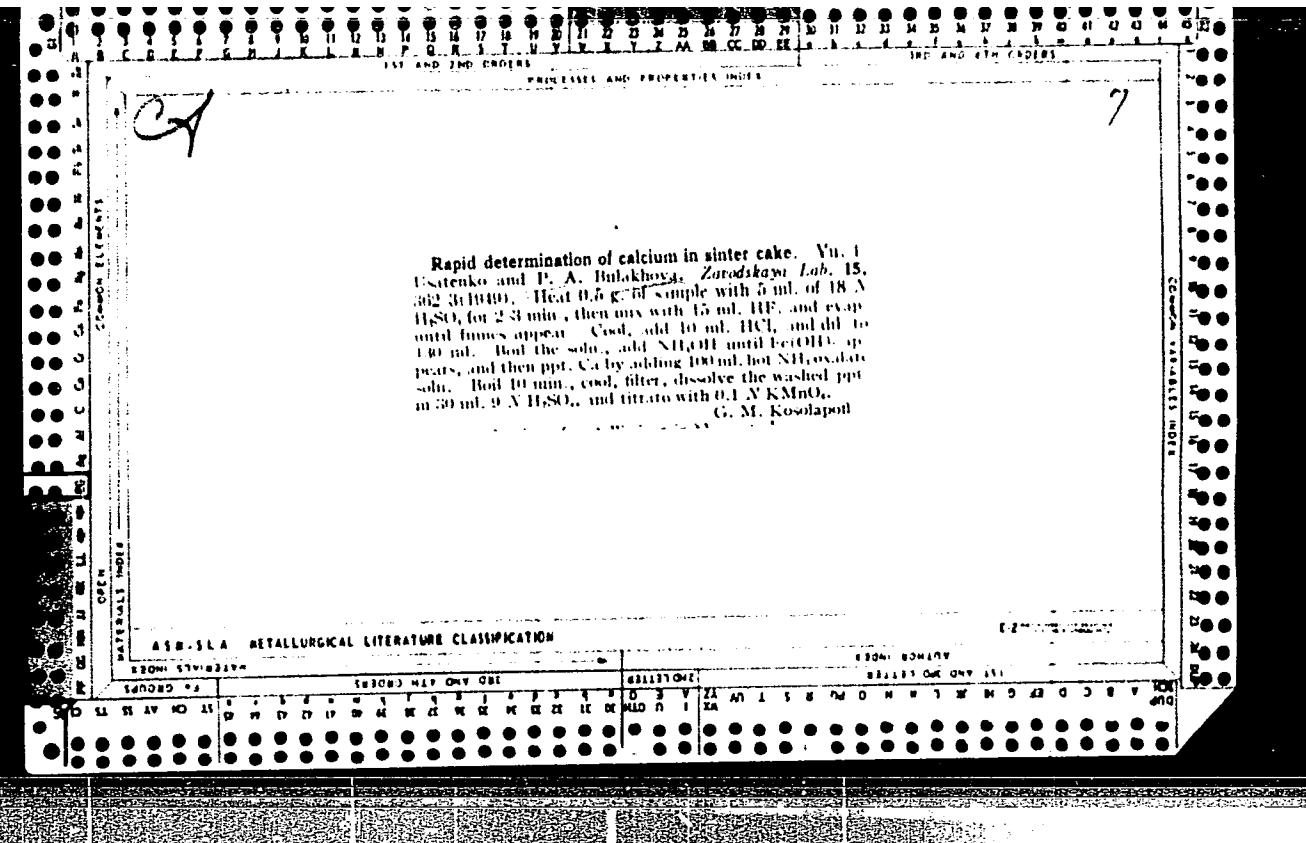
BULAKHOVA, P. A.

27127. PLOTKI N, N. Z. USAFENKO YUJI BULAKHOVA, P. A. - Bystryy meton opraceleni ya  
zak si zteleza v eksperimente. Zavodskaya laboratoriya, 1949 No f c. 909-1000  
SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

BULAKHOVA, P.A.

28937 Kvoprosu ob Uskorenii Annaliza Aglomerata. Zavodskays Laroratoriya, 1949,  
No. 9, 1128-30-Bibliogr: 7 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949



CA

7

Rapid analysis of sinter cake. Yu. I. Usatenko and P.  
A. Bulakhova. Zaretskaya Lab. 15, 1128-30(1949).  
Silica: Fuse 0.5 g. sample with 0.3 g. dry Na<sub>2</sub>CO<sub>3</sub> at  
1000°, ext. with 10 ml. of hot, concd. HCl, evap. to a  
small vol., add 10 ml. 0.1% gelatin soln., keep 2-3 min.  
at 70°, filter, wash with 0.6 N HCl, and ignite. Fe:  
Proceed as above to the removal of the H<sub>2</sub>SiO<sub>3</sub>, reduce  
Fe<sup>3+</sup> with SiCl<sub>4</sub>, add a little NaHCO<sub>3</sub> and 2 drops of  
silicomolybdic acid, and titrate Fe<sup>2+</sup> with K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> to a  
green color. Cool, add 150 ml. H<sub>2</sub>O, 40 ml. 7 N H<sub>2</sub>SO<sub>4</sub>,  
1 ml. phenylanthranilic acid soln., and titrate with di-  
chromate to a deep red and use the 2nd titration for  
the calcn. Co: After fusion as above, ext. with hot dil.  
HCl (70 ml.) and add 100 ml. hot 5% (NH<sub>4</sub>)<sub>2</sub>C<sub>2</sub>O<sub>4</sub>, neu-  
tralize, and titrate the acid soln. of the CaC<sub>2</sub>O<sub>4</sub> ppt  
Titrate with KMnO<sub>4</sub>. Mn: Use the Ag persulfate method  
after dissolving the sample in H<sub>3</sub>PO<sub>4</sub>-H<sub>2</sub>SO<sub>4</sub>. G. M. K.

BULAKHOVA, P. A.

USSR/Engineering - Refractories  
Chemistry - Silicates, Decomposition

Jun 50

"Rapid Method for Decomposition of Silicates," Yu. I. Usatenko, P. A. Bulakhova,  
Metallurgical Plant imeni Dzerzhinskiy

"Zavod Lab" Vol XVI, No 6, pp745-746

Suggests new procedure for decomposing silicates in process of analyzing  
chamotte, dinas, quartz, acid slag, clays, and other similar materials. Quick  
decomposition of silicates considerably simplifies and accelerates their complete  
analysis. Determination of silica takes 1-1.5 hr.

PA 163T8

BULAKHOVA, P. A.

180T87

USSR/Minerals - Ores, Analysis

Nov 50

"Accelerated Determination of Phosphorus in Agglomerate," Yu. I. Usatenko, P. A. Bulakhova, Metallurgical Plant imeni Dzerzhinsky

"Zavod Lab" No 11, pp 1393, 1394

Suggests method for decompn of sample of agglomerate in mixt with min amt of sodium carbonate. Same sample may serve for detn of silica. Method was verified on std samples of iron and manganese ores and on many samples of agglomerate and showed satisfactory results and considerable decrease in length of anal.

180T87

BULAKHOVA, P. A.

USSR/Minerals - Ores, Analysis

Dec 50

"Decomposition of Agglomerates and Insoluble Iron Ores Without Using Platinum Crucibles,"  
Yu. I. Usatenko, P. A. Bulakhova, Metallurgical Plant imeni Dzerzhinskii

"Zavod Lab" No 12, pp 1497, 1498

Suggests obtaining soln of agglomerates and ores, insol in acids, by preliminary sintering with sodium carbonate. Soln in hydrochloric acid obtained in 3-5 min, while ordinary method requires nearly 3 hr. Sintered product is dry mass, and sintering may be conducted on nickel plate instead of platinum crucible.

182T102

15-57-1-800

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,  
p 125 (USSR)

AUTHOR: Bulakhova, P. S.

TITLE: Peat in Lowland Swamps in the Suburban District of  
Alma-Ata (Nekotoryye dannyye o torfakh nizinykh  
bolot prigorodnoy zony g. Alma-Aty)

PERIODICAL: Tr. Kazakhsk. s-kh. in-ta, 1955, Vol 5, Nr 1,  
pp 161-167.

ABSTRACT: Peat in the suburban district of Alma-Ata, studied in  
connection with its application to agriculture, is of  
the lowland type, with a high ash content (47.80 to  
86.40 percent). The peat bogs are small (0.5 to 5  
hectares) and contain various grasses, reeds, and  
sedges. The peat deposits are 0.3 m to 0.5 m thick.  
The maximum moisture capacity of the peat is 344.82  
percent; the minimum is 157.07 percent. The iron  
content ( $Fe_2O_3$ ) in the peat is 1.7 to 8.2 percent; CaO  
forms 1.21 to 6.45 percent. By using a 20 percent

Card 1/2

15-57-1-800  
Peat in Lowland Swamps in the Suburban District of Alma-Ata (Cont.)

solution of hydrochloric acid it was found that the peat contains little or no easily soluble salts. It has been shown in practice that pots of peat mulch from peats in the suburban areas of Alma-Ata at a number of state farms are unsuitable for growing seedlings. This failure is explained by the presence of chloride or sulfate salts distributed irregularly in small zones in the peat bogs. The author therefore suggests that the peat be first washed and aerated before using.

Card 2/2

M. Ye. G.

BULAKHOVA, P. S.

Cand Agr Sci - (diss) "Soils of the "Issyk" Sovkhoz of the Alma-Atinskaya Oblast, and changes of the soils under garden and vine-yard conditions." Alma-Ata, 1961. 20 pp; (Kazakhstan State Agricultural Inst, Chair of Soil Behavior); 150 copies; price not given; (KL, 6-61 sup, 230)

BULAKIN, I.M.; SHABANOVA, N.A.

Order of the reaction in acidic -- alkaline denaturation of proteins.  
Ukr.biokhim.zhur. 26 no.3:235-244 '54. (MLRA 7:12)

1. Kafedra biokhimii Khar'kovskogo gosudarstvennogo universiteta im.  
A.M.Gor'kogo.  
(Proteins)

BULAKOV, B. M.

5617

Pukovodstvo po blokirovke kryshek lyukov testomesil'noy mashiny khtsh. M.,  
Pishchepromizdat, 1954. 12S. s chert. 20sm. (M-Vo prom-sti provodol'stv.  
tovarov SSSR. Tekhn. upr. otd. Tekhn. informatsii). 1.000 Ekz. Bespl.  
Sost. ukazan v kontse teksta. (55-1034)P 664.65

SO: Knizhnaya Letopis', Vol. 1, 1955

BULAKOV, B.M.

Results of all-Union conference on safety measures and industrial hygiene. Khleb. 1 kond. prom. 1 no. 3:47-48 Mr '57. (MIRA 10:4)

1. Rosgavkhleb.  
(Industrial safety)

BULAKOV, B.V., OSCILLATIONS, Gostekhtoretzdat, M., 1954, 891 pages.

The first part of the book contains the fundamentals of matrix and operational calculus and an exposition of some questions in analytical mechanics that are closely bound up with the theory of oscillations.

The second part of the book examines free and forced oscillations of systems with one degree of freedom, mainly non-linear systems.

The third part examines: internal and forced oscillations of systems with many degrees of freedom; passive systems; linear regulated systems; the theory of linear systems with periodic coefficients; the theory of oscillations of non-linear systems with many degrees of freedom.

BULAKOVSKAYA, Ye.I., inzh.; BOGOMOLOV, D.F., inzh.; IVANOV, V.G., kand.  
tekhn.nauk; POYGIN, B.V., inzhener-polkovnik

Assembly planning and use of industrial methods in the assembly  
of indoor facilities. Vod.i san.tekh. no.4:15-16 Ap '62.

(MIRA 15:8)

(Plumbing)

BULAKOVSKIY, V. I.

BULAKOVSKIY, V. I., Inzhener i TSATSKA, F. N., Inzhener i KALISHUK, A. L.,  
Kand. Tekhn. Nauk.  
Ukrainskiy nauchno-issledovatel'skiy institut sooruzheniy.

BLOKI NA BESKLINKERNIKH VYAZHUSHCHIKH.

page 95

SO: Collection of Annotations of Scientific Research Work on Construction,  
compiled in 1950,  
Moscow, 1951

BULAKOVSKIY, V. I.

Bulakovskiy, V. I.

"The use of wet-ground granulated slag in concrete." Min Higher Education  
SSR. Kiev Construction Engineering Inst. Kiev, 1956. (Dissertation for  
the Degree of Candidate in Technical Sciences).

So: Knizhnaya letopis'  
No. 25, 1956, Moscow

BOGDANOVICH, Galina Nikolayevna, kand. tekhn. nauk; BULAKOVSKIY, Vadim-Ivanovich, kand. tekhn. nauk; GOLOVCHENKO, Pavel Sergeyevich, kand. tekhn. nauk; DEKHTYAR, Etya Mikhaylovna, inzh.; KARNAUKHOV, Nikolay Petrovich, inzh.; KLIMANOVA, Yekaterina Antonovna, kand. tekhn. nauk; KRAVTSOV, Boris Konstantinovich, kand. tekhn. nauk; LIBERMAN, Al'fred Davidovich, kand. tekhn. nauk; LUKASHENKO, Ivan Andreyevich, kand. tekhn. nauk; POGREBNYAK, Zinaida Feofanovna, kand. tekhn. nauk; ROKHLIN, Il'ya Aleksandrovich, kand. tekhn. nauk; TRET'YAKOV, Lev Dmitriyevich, kand. tekhn. nauk; TSATSKINA, Frida Naumovna; REZNICHENKO, I.Ye., red.; LEUSHCHENKO, N.L., tekhn. red.

[Handbook for construction laboratories] Spravochnik dlia stroitel'-nykh laboratoriil. Pod red. B.K. Kravtsova. Kiev, Gosstroizdat, 1962. 821 p. (MIRA 16:3)

1. Nauchnyye sotrudniki Akademii stroitel'stva i arkhitektury Ukr.SSR (for all except Reznichenko, Leushchenko).  
(Building research--Handbooks, manuals, etc.)

RODYAKIN, V.V.; ANDREYEV, A.Ye.; BOYKO, Yu.N.; VAYNSHTEYN, G.M.;  
KARGIN, V.M.; BRODSKIY, E.Ye.; KHABAROVA, N.P.; TKALICH, V.S.;  
Prinimali uchastiye; PIROZHOK, Ye.V.; YURCHENKO, S.V. [deceased];  
MUNTYANOV, I.P.; SUKHORUKOVA, N.Yu.; BULANAYA, N.K.; AKHTEMENKO,  
N.Ya.; BRAGIN, A.M.

Handling of molten metallic magnesium. TSvet. met. 37 no.12.  
53-56 D '64. (MIRA 18:2)

BULANDA, Boguslaw

Statistics, problems, and therapy of prostatic cancer. Polski przegl.  
chir. 29 no.7:679-691 July 57.

1. Z Kliniki Urologicznej A. M. w Krakowie. Kierownik: prof. St.  
Laskownicki.  
(PROSTATE, neoplasms,  
review (Pol))

BULANDA, Boguslaw

Conditions of the kidney after a renal fistula of 20 year duration.  
Polski przegl. chir. 33 no.3:271-274 '61.

l. Z Kliniki Urologicznej AM w Krakowie Kierownik: prof. dr  
St. Laskownicki.

(RENAL FISTULA case reports)

BULANDA, Boguslaw

Surgical results in 28 cases cases of hydronephrosis. Polski przegl.  
chir. 33 no.4:375-380 '61.

1. Z Kliniki Urologicznej A.M. w Krakowie Kierownik: prof. dr  
St. Laskownicki.  
(HYDRONEPHROGIS surg)

BULANDA, Boguslaw

Significance of the blood and tissue specificity in kidney transplantation and in other urological, surgical and immunological problems. Postepy hig. med. dosw. 15 no.5:483-495 '61.

l. Z Zakladu Mikrobiologii Lekarskiej AM w Krakowie Kierownik:  
prof. dr.Z. Przybylkiewicz.  
(KIDNEYS transpl) (BLOOD GROUPS)

Bulanda J.

5958

542.03

Ciborowski J., Bulanda J. The Problem of Diffusion by Free Evaporation of Two-Component Liquids.

„Problemy dyfuzji przy odparowaniu swobodnym cieczy dwuskładnikowych”. Przemysł Chemiczny, No. 8, 1958, pp. 516–519, 1 fig., 2 tabs.

This paper deals with theoretical considerations concerning the rate of free evaporation of two-component mixtures. An equation is derived which eliminates the necessity of using the trial and error method, and a nomogram plotted for the approximate Lewis equation. The deviations of the results obtained from the equation and from the nomogram (on the example of the system benzene-toluene-air) are compared with the results of the exact Gilliland diffusion equations, requiring the application of the trial and error method. The range of deviations is 2%. The accuracy of the new method is sufficient for technical computations.

5

4E3d

2927(1.3)

Jaf

SELECKI, Anatol; BULANDA, Jan

Some problems of chemonuclear technology. Pt.2. Przeg.  
chem 42 no.6:279-282 Je '63.

1. Zaklad Stosowania Izotopow w Chemii i Technologii  
Chemicznej, Instytut Badan Jadrowych, Warszawa.

BULANDA, Jan; ILLINICZ, Jerzy; FAZMIEROWICZ, Wiktor; SZOZDA, Leslaw

Fractioning phenol oil from the gas liquors of low-temperature  
gas generators. Pt. 1. Przem chem 42 no.10:548-551 0'63.

1. Huta Warszawa i Zaklad Projektowo-Konstrukcyjny, Instytut  
Chemiczny, Warszawa.

L 41976-65 ENT(m)/EWG(m) Feb DIAAP RWH/RM

ACCESSION NR: AP5012525

PO/0046/64/009/009/0733/0744

2/1  
3/0  
b

AUTHOR: Smal, Zbigniew (Smal', Z.); Bulanda, Jan (Bulyanda, Ya.); Horaki, Jozef (Gorski, Yu.); Siemaszko, Aleksander (Semashko, A.)

TITLE: Sorption of radioactive isotopes on certain ionites

SOURCE: Nukleonika, v. 9, no. 9, 1964, 733-744

TOPIC TAGS: isotope, ion exchange, water sanitation, radioactive contamination

Abstract: The article reports on the study of some Polish and Soviet ion-exchange materials to determine their suitability for decontaminating drinking water from radioactive isotopes. The apparatus is described with which the total exchange capacity and the percent sorption were measured. The experimental procedure is described also, namely the simulation of water, the mixing and diluting of disintegration products and carriers, and the build-up of columns with gravel or steel filings. All the tested ionites (Polish-made cationites MK2, MK3, Esscarbo; Russian-made anionite EDE-10-P) were found satisfactory. The effect that the velocity of passage through the column has on the

Card 1/2

L 41976-65

ACCESSION NR: AP5012525

sorption efficiency is established on the basis of measurements. It is also found, that the decontaminated water is still not palatable on account of saline deficiency.

Orig. art. has 2 figures, 1 graph, and 7 tables.

ASSOCIATION: Instytut Badan Jadrowych, Pracownia Specjalna, Warsaw (Special Laboratory, Institute of Nuclear Research)

SUBMITTED: 19Nov63

ENCL: 00

SUB CODE: NP, GO

NO REF Sov: 001

OTHER: 005

JPRS

LL  
Card 2/2

BULANDA, Jozef; RUDOLPH, Jozef; LUDVÍK, Libor; VÍTĚZSLAV, Jaroslav;  
FRANTIŠEK, Václav

Studies on the usefulness of Polish made sorbents for the  
purification of chemically contaminated waters. Ganzavia  
techn. servis 38 no.1:15-37 Ja 1964

I. Institute for Nuclear Research, Prague.

SMAI, Zbigniew; BULANDA, Jan; WOJSKI, Jozef; SIEMASZKO, Aleksander.

Laboratory experiments in decontaminating surface waters by  
using sorbents. Gaz woda techn sanit 38 no.3:74-78 Mr '64

1. Institute for Nuclear Research, Zeran Branch.

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307420007-8

BULANDA, M.

BULANDA, M.

"Studies on the pollination of sweet, sour, and duke cherries", p. 95, (ROZCZNIKI  
NAUK ROZINOWYCH. SERIA A-ROSLINNA, Vol. 66, no.4, 1953, Warsaw, Poland.)

SO: Monthly List of East European Accession, Library of Congress, Vol. 2, no. 10  
October 1953, Uncl.

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307420007-8"

BOBR-PORWIT, Zofia; BULANDA, Maria

In vitro effect of chloromycetin on gram-negative bacteria isolated from the conjunctival sac, comparison with other antibiotics. Klin. oczna 26 no.1:47-52 1956.

1. Z Kliniki Chorob Oczu A. M. w Krakowie. Kierownik: prof. dr. M. Wilczek i z Zakladu Mikrobiologii A. M. w Krakowie. Kierownik: prof. dr. Z. Przybylkiewicz.

(CHLORAMPHENICOL, effects

on gram-negative bact. from conjunctiva, comparison with antibiotics (Pol))

(ANTIBIOTICS, effects -

on gram-negative bact. from conjunctiva, comparison with chloramphenicol (Pol))

(BACTERIA, effect of drugs on

antibiotics on gram-negative bact., comparison with chloramphenicol. (Pol))

*Bulanda M.*  
EXCERPTA MEDICA Sec 12 Vol 13/4 Ophthalmology Apr 59

658. APPLICATION OF FURACIN IN OPHTHALMOLOGY - Zastosowanie  
furacyny w okulistyce - Bulanda M. Klin. Chor. Oczu A.M., Kraków -  
KLIN. OCZNA 1958, 28/2 (139-142) Tables 1

The influence of the drug was examined in vivo and in vitro. The effects were  
good, the drug seemed to be very efficacious. Its antibacterial influence is dis-  
tinct, its application in the inflammations of the outer part of the eye is justified.  
The complications of trachoma may be removed. References 40.

Szmyt - Warsaw (XII, 50)

EXCERPTA MEDICA Sec 12 Vol 13/7 Ophthalmology July 59

1068. SELF-INJURIES OF THE EYES - Samouszkodzenia oczu - Bulanda M.  
Klin. Chor. Oczu A. M., Kraków - KLIN. OCZNA 1958, 28/2 (159-163)  
Prisoners, soldiers, applicants for pensions and mentally sick subjects try to injure themselves to obtain compensation. There is an interesting case of a cocaine addict who wanted to get rid of the boring cocaine visions. He wounded his eyes with knives and needles and subsequently lost his sight. Some other cases observed in the clinic are described.  
Szmyt - Warszawa

BULANDA, Maria; ZGORNIAK-NOWOSIELSKA, Izabela

Sensitivity to antibiotics of pathogenic microorganism of the  
human eye (resistance in vitro and in clinical conditions). Klin.  
oczna 30 no.2:175-183 '60.

1. Z Kliniki Chorob Oczu A.M. w Krakowie. Kierownik: prof.dr med.  
M. Wilczek. Z Zakladu Mikrobiologii Lekarskiej A.M. w Krakowie.  
Kierownik: prof.dr med. Z. Przybylkiewicz.  
(ANTIBIOTICS pharmacol.)  
(EYE microbiol.)

Bulandr Jiri

CZECHOSLOVAKIA/Analytical Chemistry - Analysis of Organic  
Substances.

E-3

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24905

Author : Dolezil Milan, Bulandr Jiri

Inst :

Title : Use of Fluorescent Indicators for Determination of Small  
Amounts of Surface-Active Substances. II. Determination  
of Organic Quaternary Salts and Bases.

Orig Pub : Chem. listy, 1957, 51, No 2, 255-258

Abstract : Description of a titrimetric method of determination of  
small amounts of organic, cation-active, quaternary salts  
and bases by means of anion-active, higher aliphatic sul-  
fates, in the presence of fluorescent indicators. The me-  
thod is based on the reaction KX + ROSO Na = ROSO K + NaX  
(K -- surface-active cation, R -- hydrocarbon radical con-  
taining 8, or more, C-atoms). Titration is carried out  
under ultraviolet illumination. As indicator is used the

Card 1/3

//

CZECHOSLOVAKIA / Analytical Chemistry - Analysis of Organic  
Substances.

E-3

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24905

Na-salt of eosin (I), which forms with K a difficultly soluble salt, the solubility product of which is greater than the solubility product of ROSO K. On titration with a solution of ROSO Na the ROSO<sup>-</sup> anions displace near the equivalence point the anions of I from this salt and an intensive green fluorescence of anions of I becomes apparent. About 0.25 g of the substance are dissolved in warm water, to an aliquot portion of the solution are added 0.05 ml of 0.2% solution of I, the acid (up to a definite pH) is diluted with water to a definite volume and titrated with  $10^{-2}$  -  $10^{-3}$  M solution of Na lauryl sulfate (II), under ultraviolet illumination, until intensity of fluorescence ceases to increase. Quaternary salts are titrated at pH 3.5-9, the amines at pH 3.5-4.5. Titer of solution of II is determined with standard solution of cetyl trimethylammonium bromide or

Card 2/3

CZECHOSLOVAKIA/Analytical Chemistry - Analysis of Organic  
Substances.

E-3

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24905

cetyl pyridinium bromide. Electrolytes do not interfere  
if ionic force does not exceed 0.05.  
Communication I see RZhKhim, 1957, 44956.

Card 3/3

/2

J. BULANDR

✓ Flotation properties of organic surface-active compounds.  
M. Doležil, J. Bulandr, and Z. Strejc (Výzkumný ústav  
hutnického železa, Prague). *Rudy* (Prague) 6, No. 4, 1-8  
(1953).—Org. surface-active compds., which are used as  
collectors, frothers, emulsifiers, dispersers, etc., were studied.  
The concn. of these compds. in soln. was detd. volumetri-  
cally. The surface-active ions present in some of these  
compds., as well as their behavior as strong electrolytes, were  
established.

I. Hypr

JGJ

BULANDR, J.; DOLEZIL, M.

Flotation time and its calculation. p. 92

RUDY. Praha, Czechoslovakia, Vol. 7, no. 3, March 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 7, July 1959  
Uncl.

BULANDR. J.; DCLEZAL, M.

"Application of fluorescent indicators to determine small amounts of surface-active substances" II. Determination of organic quaternary salts, bases, and amines. In Russian. p. 70.

COLLECTION CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech., Vol. 24, No. 1, Jan. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. c. Sept. 59  
Unclassified

BULANDR, Jiri; DOLEZIL, Milan, dr.; BROZEK, Miroslav

New flotation reagent for nonsulfidic minerals. Rudy 11  
no.3:67-72 Mr '63.

BULANDR, Jiri; DOLEZIL, Milan; PETROVICKY, Jiri

Contribution to the analytical chemistry of xanthates. Chem listy  
57 no.8:803-811 Ag '63.

1. Vyzkumny ustav, Zelene doly a hrudkovny, Mnisek pod Brdy.

BULANDR, Jiri, inz.; DOLEZIL, Milan, dr. Sc.; BROZEK, Miroslav

Flotation of graphitic material. Sbor Vyzk ust Mnisek  
4:173-191 '64.

1. Research Institute of the Zelazorudne doly a hrudkovny  
National Enterprise, Mnisek.

BULANDR, Jiri, inz.; DOLEZIL, Milan, dr. CSc.; CIBULKA, Jaroslav, inz. CSc.

Treatment of baryte flotation concentrates for use as  
weighting material. Pt.2. Sbor Vyzk Mnisek 4:193-204 '64.

1. Research Institute of the Zalezorudne doly a hrudkovny National Enterprise, Mnisek (for Bulandr and Dolezil).
2. Institute of Ore Research, Prague (for Cibulka).

BULANDR, Jiri, inz.; DOLEZIL, Milan, dr. CSc.

Treatment of baryte flotation concentrates for use as weighting material. Pt. 3. Sbor Vyzk ust Mnisek 4:205-211 '64.

1. Research Institute of the Zálezorudne doly a hřudkovny National Enterprise, Mnisek.

VICIU, Emil, dr.; SAFIRESCU, Theodor, dr.; BULAJDRA, C., dr.

The clinical value of rheography. Med. intern. 14 no.2:241-254  
F '62.

1. Lucrare efectuata in Clinica a V-a medicala, Spitalul "Vasile  
Roaita", I.M.F. Bucuresti (director: prof. T. Spirchez).  
(PLETHYSMOGRAPHY)

STANESCU, D.; TECULESCU, D.; BULANDRA, C.; HALALAU, F.

Considerations on a case of atrial infarct. Stud. cercet. med.  
intern. 6 no.2:179-184 '65.

VICIU, E., dr.; BULANDRA, C., dr.; SAFIRESCU, T., dr.; DULGHERU, Carmen, dr.

Cerebral circulation in hypertensive patients. Med. intern. 15  
no.2;185-190 F '63.

1. Lucrare efectuata in Clinica medicala a Spitalului "V. Roaita",  
I.M.F. Bucuresti (director: prof. T. Spirchez).  
(HYPERTENSION) (CEREBRAL ARTERIES) (BLOOD CIRCULATION)

VASILESCU, N., dr.; BULANDRA, R., dr.

Neurological manifestations of vertebral rheumatism. Med. intern.  
14 no.7:837-842 J1 '62.

1. Clinica de Neurologie, Spital Colentina-Bucuresti.  
(SPINAL DISEASES) (ARTHRITIS, RHEUMATOID)  
(NEUROLOGIC MANIFESTATIONS)

BULANEK, Frantisek D., Dr.

Economic relations between plant production and beekeeping. *Vestnik CSAZV* 8 no. 7: 392-394 '61.

1. Vyzkumny ustav vcelarsky Ceskoslovenske akademie zemedelskych  
ved, Dol u Libcic.

(Plants) (Bees)

BULANEK, Frantisek D., Dr.

National Conference on Placing Beehives Near Field Crops. *Vestnik  
CSAZV* 8 no. 7:414-415 '61.

1. Vyzkumny ustav vcelarsky Ceskoslovenske akademie zemedelskych  
ved, Dol u Libcic.

(Bees) (Czechoslovakia—Agriculture)

BULANEK, Frantisek, D., dr.

The role of the Bee Culture Research Institute. Vestnik vyzk  
zemedel 9 no.9:453-456 '62.

1. Vyzkumny ustav vcelarsky, Dol u Libcic nad Vltavou.

BULANEK, Frantisek, dr.

Nineteenth Congress of the International Beekeeping Organization  
Apimondia. Vest ust zemedel 10 no.9:326-340 '63.

1. Vyzkumny ustav vcelarsky, Dol u Libcic nad Vltavou.

SMRZ, Jaroslav, inz.; BULANEK, Josef, inz.

Measurement of speed, accelerations, and retardation of winding equipment. Uhli 6 no. 4: 135-138 Ap '64.

1. Sdruzeni kamenouhelnych dolu, Kladno.

Country : USSR  
Category : Farm Animals.  
Abs. Jour : Cattle.  
Abs. Jour : Ref Zhur-Biol., No 21, 1958, 96868  
Author : Bartosh, S.; Bulanek, Ya.; Khatleova, A.;\*  
Institut. : -  
Title : The Effect of Compulsory Exercise and Pasturage  
on the Metabolism of Calves.  
Orig Pub. : Vestn. s.-kh. nauk, 1958, 2, 110-118  
Abstract : Experiments have shown that raising on pasture  
and compulsory exercise have a favorable effect  
upon improving the respiratory, cardio-vascular  
and biochemical systems which are linked to the  
citric acid cycle.

Card: 1/1  
\*Kafka, A.

BULANENKO, F.M.

KIRTBAYA, Yuriy Konstantinovich; BULANENKO, F.M., kandidat tekhnicheskikh nauk, dotsent, retsenzent; SEMENOV, A.N., kandidat tekhnicheskikh nauk, dotsent, redaktor; SOROKA, M.S., redaktor izdatel'stva; RUDENSKIY, Ya.V., tekhnicheskiy redaktor

[Principles of the theory of machine use in agriculture] Osnovy teorii ispol'zovaniia mashin v sel'skom khoziaistve. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. 1957. 277 p.  
(Agricultural machinery) (MLRA 10:6)

BULANENKO, F.M.; kand.tekhn.nauk, dotsent; GOLOVIN, D.D., kand.tekhn.nauk,  
dotsent

Results obtained from investigating the performance of SKG-4 potato  
planters under field conditions. Nauch.zap. KHIMSKH no.11 Fak.  
mekh. sel'khoz. 1:63-75 '58. (MIRA 14:3)  
(Planters(Agricultural machinery))

S/114/63/000/001/005/007  
D262/D308

AUTHORS: Shevyakov, S.I., Doctor of Technical Sciences, Professor, Bulanenkov, L.F., Engineer

TITLE: Design of a gas turbine of increased power rating

PERIODICAL: Energomashinostroyeniye, no. 1, 1963, 41-43

TEXT: The article, published as a discourse in Teploenergetika, 1959, no. 10, by V.V. Uvarov et al is reviewed critically and many of its data, conclusions, and recommendations are analyzed and found incorrect. The stage efficiency particularly appears to be too high; to prove this point the analytical method of calculation, applying the energy and Euler equations is presented. The suggested application of special diffusors is also considered to be unjustified. There are 3 figures and 3 tables.

Card 1/1

BULANIKIN, M.I.

Oscillograph MO-7 used as an electrocardioscope. Fiziol.zhur. SSSR  
45 no.7:886-887 J1 '59. (MIRA 13:4)

1. From the department of physiology, Medical Institute, Khabarovsk.  
(ELECTROCARDIOGRAPHY equip, & supplies)

BULANIN, M.O.

PRIKHOT'KO, A.F.

24(7) p 3 PHASE I BOOK EXPLOITATION Sov/1365

L'vov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii. t. 1:  
 Molekul'arnaya spektroskopiya (Papers of the 10th All-Union  
 Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy)  
 [L'vov] Izd-vo L'vovskogo universita, 1957. 499 p. 4,000 copies  
 printed. (Series: Itst fizichnyi zhurnal, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po  
 spektroskopii. Ed. Gazer, S.L.; Tech. Ed.: Saranyuk, T.V.;  
 Editorial Board: Landberg, G.S., Academician (Resp. Ed., Deceased),  
 Reporen, B.S., Doctor of Physical and Mathematical Sciences,  
 Fabelinakiy, I.L., Doctor of Physical and Mathematical Sciences,  
 Fazikants, V.A., Doctor of Physical and Mathematical Sciences,  
 Kornitakly, V.D., Candidate of Technical Sciences, Raskin, S.M.,  
 Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K.,  
 Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S.,  
 A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Lutskiy, A. Ye. Electron Spectra and the Intramolecular Hydrogen Bond	196
Lutskiy, A. Ye., and D.S. Bidnaya. Raman Spectra and the Strength of Intramolecular Hydrogen Bonding	197
Bulanin, M.O., and V.M. Chulanovskiy. Study of the Effect of the Solvent on the Frequencies and Form of Absorption Bands of Water Molecules in the Valence-vibration Range	199
Raskin, Sh. Sh. Some Characteristics in the Raman Spectra of Complex Compounds Containing Antimony Trichloride	203
Shigorin, D.N. Nature of the Hydrogen Bond and Its Effect on Vibrational and Electron Spectra of Molecules	205
Babushkin, A.A., N.G. Guseva, and V.M. Yemel'yanov. Infrared Spectra of Boron Trifluoride Molecular Compounds With Certain Amines	212

Card 14/30

BULANIN, M.O.

AUTHOR: Bulanin, M.O.

51-5-2/26

TITLE: On the Structure of the Absorption Bands of the Liquid H<sub>2</sub>O, D<sub>2</sub>O and HDO, as determined by their Molecular Structure.  
(O strukture polos pogloshcheniya zhidkikh H<sub>2</sub>O, D<sub>2</sub>O i HDO,  
opredelyayemoy stroyeniyem ikh molekul)

PERIODICAL: Optika i Spektroskopija, 1957, Vol. 2, Nr 5, pp.557-561,  
(USSR)

ABSTRACT: The vibrational spectrum of liquid water studied by many people both using Raman scattering and infrared absorption. The experimental material available is, however, both contradictory and incomplete. This in particular applies to heavy (D<sub>2</sub>O) and "semi-heavy" (HDO) water. This paper reports measurements of the infrared absorption spectra for liquid H<sub>2</sub>O, D<sub>2</sub>O and HDO in the region of valence frequencies of OH and OD at 2200-3700 cm<sup>-1</sup>. Recording, single-beam infrared spectrophotometers MKC-11 and MKC-6 were used. They had lithium fluoride prisms. The slit was not wider than 10 cm<sup>-1</sup> at the wavelength of 3 μ and 4 cm<sup>-1</sup> at 3.7 μ. The absorption bands in H<sub>2</sub>O and D<sub>2</sub>O were recorded for layers

Card 1/2

51-5-2/26  
On the Structure of the Absorption Bands of the Liquid H<sub>2</sub>O, D<sub>2</sub>O and HDO, as Determined by their Molecular Structure.

about 2 $\mu$  thick, the HDO bands using 10 $\mu$  layers. The absorption spectra of singly, doubly and trebly distilled water were obtained. The heavy water (D<sub>2</sub>O) contained no less than 98% of deuterium. The experiments were carried out at 19-21°C. In the case of H<sub>2</sub>O and D<sub>2</sub>O the bands possess doublet structure with components at 3425, 3290 and 2550, 2435 cm<sup>-1</sup> respectively. This structure is due to overlap of the bands of symmetrical and antisymmetrical vibrations of the H<sub>2</sub>O and D<sub>2</sub>O molecules. The HDO bands have broad maxima around 3420 and 2510 cm<sup>-1</sup>. These results agree with Pople's theory (Ref.26) Assuming that the structural ordering in liquid water is only of a local nature and taking into account the deformation of the hydrogen bonds, Pople found a curve of radial distribution which is close to that found experimentally (Ref.27). The author is grateful to Prof. V.M. Chulanovskiy for direction and appraisal of the work. There are 2 figures and 28 references, of which 5 are Slavic.

SUBMITTED: November 1st, 1956.

AVAILABLE: Library of Congress.  
Card 2/2

*B.C./m/n, M.O.*

Distr: 4E4/4E3d/4E2c(j)

✓ Infrared absorption spectra of trialkylsiloxanes. M. O. Bulein, B. N. Dolgov, T. A. Sternberg, and N. P. Kharitonov (Inst. Silicate Chem. Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 31, 1321-7 (1957).—Infrared absorption spectra in the range 3000-450 cm<sup>-1</sup> were detd. of triethylalkoxysilanes, Et<sub>3</sub>SiOR, where R was Me, Et, Pr, iso-Pr, C<sub>6</sub>H<sub>5</sub>, 2-C<sub>6</sub>H<sub>5</sub>, *tert*-C<sub>6</sub>H<sub>5</sub>, C<sub>6</sub>H<sub>5</sub>, C<sub>6</sub>H<sub>5</sub>, and Ph. The stretching force const. of the C-O bond was calcd. by the empirical formulas of Badger (*C.A.* 30, 373), Guggenheim (*Discussions Faraday Soc.* No. 9, 221(1951)) and of Gordy (*C.A.* 40, 4268);  $k = 4 \times 10^3$  dynes/cm.  
W. M. Sternberg

BULANIN, M. O. Cand Phys-Math Sci -- (diss) "Infrared absorption spectra of water  
of water and <sup>Acrylic</sup> ~~esters~~ [or its] solutions." Len, 1958. 8 pp (Len Order of Lenin  
State Univ im A. A. Zhdanov), 100 copies (KL, 14-58, 109)

AUTHOR: Bulanin, M.O. and Orlova, N.D. 51-4-3-1/29

TITLE: Investigation of the Changes of the Rotation-Vibration Spectrum of Certain Simple Molecules Upon Dissolution (Issledovaniye izmeneniy vrashchatel'no-kolebatel'nogo spektra nekotorykh prostykh molekul pri rastvorenii)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 5, pp 562-571 (USSR)

ABSTRACT: Transition from the vapour state to liquid or solution is normally accompanied by disappearance of the rotational structure of bands in the vibrational spectrum. This effect is ascribed to the absence of free rotation of molecules in liquids. The rotational motion is least affected on liquefaction of hydrogen (Ref 1). In liquid oxygen, nitrogen and methane the discrete rotational spectrum is absent (Ref 2) and only the form of bands in the Raman scattering indicates certain freedom of rotation of the respective molecules. No rotational structure was discovered so far in solutions. The present paper reports results of studies of the infrared absorption spectra of solutions of hydrogen halides (HCl, DCl, HBr, DBr, HF) and of water. The measurements were made using infrared spectrometers with LiF and NaCl prisms.

Card 1/3

50-4-5-4/29

Investigation of the Changes of the Rotation-Vibrational Spectra of Certain Simple Molecules Upon Dissolution

The spectrometers were calibrated using the absorption spectra of gaseous H<sub>2</sub>O, CO, HBr, HCl and NH<sub>3</sub>. The error in determination of frequency did not exceed 5 cm<sup>-1</sup>. Thin layers of solutions were used ( $d = 0.05\text{--}8.0\text{ cm}$ ). The spectra of the following solutions were obtained: HCl in CCl<sub>4</sub>, SiCl<sub>4</sub>, TiCl<sub>4</sub>; DCl in CCl<sub>4</sub>, SiCl<sub>4</sub>, TiCl<sub>4</sub>, CHCl<sub>3</sub>; HBr and DBr in CCl<sub>4</sub>; HF in C<sub>5</sub>F<sub>12</sub>; H<sub>2</sub>O in C<sub>2</sub>Cl<sub>2</sub>F<sub>6</sub>, C<sub>2</sub>Cl<sub>3</sub>F<sub>3</sub>, CCl<sub>4</sub>, C<sub>2</sub>Cl<sub>4</sub>, CHCl<sub>3</sub>, CH<sub>3</sub>NO<sub>2</sub> and D<sub>2</sub>O in C<sub>2</sub>Cl<sub>3</sub>F<sub>2</sub>, all at room temperature, as well as HCl and HBr in CCl<sub>4</sub> at 75°C and in CH<sub>3</sub>NO<sub>2</sub> at 90°C. Some of the spectra obtained are shown in Figs 1-5. Figs 1, 2 and 3 show that the absorption bands of all hydrogen halides in solution consist of a central peak and additional maxima on both sides of the peak. The positions of the central peak and the two additional maxima, denoted by  $\nu_0$ ,  $\nu_+$  and  $\nu_-$ , are given in Table I. In the spectra of solutions of water (Figs 4 and 5) two bands were observed, corresponding to symmetrical ( $\nu_1$ ) and antisymmetrical ( $\nu_3$ ) valence vibrations. The antisymmetrical band is more intense. It is concluded that the observed additional absorption bands in the substances studied are not due to internal molecular degrees of freedom. Comparison of the solution spectra with the spectra of gases indicates that the additional absorption bands are remainders.

Card 2/3

Investigation of the Changes of the Rotation-Vibration Spectrum of Certain Simple Molecules Upon Dissolution 51-4-3-4/29

of rotational branches. This indicates that almost free rotation of the solute molecules is possible in solutions. On increase of interaction of the solute with the solvent rotation is transformed ~~into~~ librational motion. The author thanks V.I. Chulanovskiy who directed this work. There are 5 figures, 2 tables and 26 references, of which 10 are American, 6 English, 5 Soviet, 3 French, 1 German and 1 Canadian.

ASSOCIATION: Fizicheskiy institut Leningradskogo gosudarstvennogo Universiteta  
(Physical Institute, Leningrad State University)

SUBMITTED: July 5, 1957

- Card 3/3      1. Molecules - Rotation - Vibration      2. Hydrogen halides - Infrared absorption spectra  
                  3. Spectrometers - Applications

BULANIN, M. O.

CHULAROVSKY, V. M.; BULANIN, M. O.; DENISOV, G. S.; and SHUVALOVA, E.  
"Infrared Absorption Spectra of Some Two- and Three Component Solutions with  
Hydrogen Bonding."  
report submitted at the 4th International Meeting of Molecular Spectroscopy, Bologna,  
Italy, 7-12 Sept 1959.  
Physical Institute of the University, Leningrad.

24(7), 5(3)

AUTHORS: Bulanin, M.O., Denisov, G.S. and Pushkina, R.A.

SOV/51-6-6-5/34

TITLE: Spectroscopic Investigation of the Hydrogen Bond in Mercaptans  
(Spektroskopicheskoye issledovaniye vodorodnoy svyazi v merkaptanakh)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 6, Nr 6, pp 754-759 (USSR)

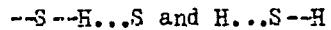
ABSTRACT: The authors used infrared absorption spectra to study hydrogen bonds in aliphatic mercaptans (thio-alcohols) and hydrogen bonds formed between thio-hydride groups of mercaptans with molecules of solvents. The infrared spectra of mercaptans and their solutions were recorded by means of a Perkin-Elmer spectrometer 12B with an LiF prism, an FEGU-18 amplifier and an EPP-09 potentiometer used as a recorder. The integral absorption coefficient K was deduced from the area of the band due to valence vibrations of the SH group. The infrared absorption spectra were recorded in the region 2400-2700  $\text{cm}^{-1}$  for liquid ethyl mercaptan ( $\text{C}_2\text{H}_5\text{SH}$ ) and normal propyl mercaptan ( $n\text{-C}_3\text{H}_7\text{SH}$ ) and their solutions in  $\text{CCl}_4$ . Table 1 shows the frequencies of the SH vibrations and the corresponding integral absorption coefficients K at various concentrations of  $\text{CCl}_4$  solutions of both mercaptans. Fig 1 gives the absorption curves obtained for solutions of propyl mercaptan in  $\text{CCl}_4$ . The band due to valence vibrations of the SH group has a half-width of about 58  $\text{cm}^{-1}$  in

Card 1/3

SOV/51-6-6-5/34

## Spectroscopic Investigation of the Hydrogen Bond in Mercaptans

the spectra of pure mercaptans. In dilute  $\text{CCl}_4$  solutions this band is displaced towards higher frequencies by about  $20 \text{ cm}^{-1}$  and its half-width decreases to  $25 \text{ cm}^{-1}$  while its integral intensity falls by a factor of 7-8. In solutions with medium concentration splitting of this band is observed (Fig 1). All these facts indicate that a hydrogen bond of the  $\text{S}-\text{H}\cdots\text{S}$  type exists in liquid mercaptan and this bond leads to association of molecules. Association between mercaptan molecules should be accompanied by appearance of SH groups with the following bonds



|

Existence of such bonds was confirmed by spectral studies of  $\text{C}_3\text{H}_7\text{SH}$  dissolved in  $\text{CHCl}_3$  and  $(\text{C}_3\text{H}_7)_2\text{S}$  (Table 2, Fig 2). Studies of the infrared spectra of  $\text{C}_3\text{H}_7\text{SH}$  dissolved in acetone (Fig 3, curve 1), dioxane (curve 2) and triethylamine (curve 3) showed that in acid solutions only a small decrease of the SH-band frequency occurs and the intensity of this band rises strongly. On the other hand dissolution of  $\text{C}_3\text{H}_7\text{SH}$  in triethylamine produces a considerable displacement, decrease of intensity and flattening of the SH-band. In a note added at proof-reading

Card 2/3

Spectroscopic Investigation of the Hydrogen Bond in Mercaptans

SOV/51-6-6-5/34

stage the authors mention R.A. Spurr and H.F. Byers's work (J. Phys. Chem., Vol 62, 425, 1958) who confirmed the existence of the S--H...S bond in aliphatic mercaptans. Acknowledgment is made to V.M. Chulanovskiy for his advice. There are 3 figures, 2 tables and 23 references, 14 of which are English, 4 Soviet, 3 French and 2 German.

SUBMITTED: July 15, 1958

Card 3/3

AUTHORS: Bulanin, M.O., Denisov, G.S. and Shchepkin, D.N. SOv/51-7-2-7/34

TITLE: On the Study of Equilibria During Formation of the Hydrogen Bond in Solutions, Using Infrared Absorption Spectra. The Case of Inseparable Bands. (Ob izuchenii ravnovesiy, obuslovlennykh obrazovaniyem vodorodnoy svyazi v rastverakh, po infrakrasnym spektram pogleshcheniya. Sluchay nerazdelyayushchikhsya polos)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 187-192 (USSR)

ABSTRACT: An infrared absorption spectroscope can be used to determine accurately the concentrations of free and associated molecules in solutions and to find the equilibrium constant K for the reaction of formation of hydrogen bonds. The temperature dependence of the equilibrium constant can be used to determine the energy of the reaction and hence the energy of the hydrogen bond. The present authors discuss theoretical determination of the equilibrium constant K and the integral absorption coefficients  $\epsilon_k$  of the molecules which make up the associated complex (formed by means of a hydrogen bond between a molecule of the solvent and a molecule of the solute). The discussion deals with the case when the absorption bands of the monomer and the complex are overlapping. Equilibrium of the type A + B  $\rightleftharpoons$  AB (where A is the solute and B is the

Card 1/2

SGV/51-7-2-7/34

\* On the Study of Equilibria During Formation of the Hydrogen Bond in Solutions, Using Infrared Absorption Spectra. The Case of Inseparable Bands.

solvent) is considered. It is shown that the treatment of the experimental results described by Lord and his co-workers (Ref 6) leads to considerable errors. A better method of determination of K and  $\epsilon_k$  is described; this method uses the least-squares technique. The paper is entirely theoretical. Acknowledgment is made to Prof. V.M. Chulanovskiy for his advice. There are 4 figures, 1 mathematical appendix and 9 references, 2 of which are Soviet, 4 English, 1 French, 1 German and 1 from an international journal.

SUBMITTED: November 28, 1958

Card 2/2

7(3), 5(4), 24(7)

SOV/48-23-10-20/39

AUTHOR: Bulanin, M. O.

TITLE: Analysis of the Isotopic Composition of Deutero-organic Compounds by Means of Infrared Absorption Spectra

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol 23, Nr 10, pp 1224-1225 (USSR)

ABSTRACT: Deutero-organic compounds are much used in chemistry for the purpose of investigating the reciprocal influence exercised by atoms in a molecule, the mobility of hydrogen atoms, the part played by the solvent, etc. During the synthesis of deutero-organic compounds it is necessary to watch isotopic composition, which may be carried out by various methods. One of these methods is infrared spectroscopy. The accuracy of such an analysis depends essentially upon what absorption bands of the isotopic mixture to be analyzed, i.e. that of the main component or that of the impurities, are chosen for analysis. By impurities such molecules are in the present case understood as are not or only insufficiently deuterized. If the analysis is carried out in accordance with the main bands, the error will amount to only 7-10%, but if it is carried out according to the bands of impurities, it may become much less, which fact is connected with

Card 1/3